

In the Claims

Applicants present replacement claims below indicating the changes with insertions indicated by underlining and deletions indicated by strikeouts and/or double bracketing.

1. (Currently amended) An article comprising:
an electrical crossbar array comprising at least two crossed wires, at least one of which is a nanoscopic wire constructed and arranged to be movable from a first position to a second position.
2. (Canceled)
3. (Currently amended) An article as in claim 2 1, wherein the at least two wires are in electrical contact with each other.
4. (Canceled)
5. (Original) An article as in claim 1, wherein the at least two wires are not in contact with each other.
6. (Canceled)
7. (Original) An article as in claim 1, wherein the at least two wires comprise a first wire disposed adjacent a second wire at a junction.
8. (Original) An article as in claim 7, wherein the first wire is positioned on a substrate.
9. (Original) An article as in claim 8, wherein the first wire is positioned intermediate the substrate and the second wire.
10. (Original) An article as in claim 9, wherein the second wire is supported above the first

wire, relative to the substrate.

11-12. (Canceled)

13. (Original) An article as in claim 7, wherein the second wire has sufficient stiffness to remain free of contact with the first wire.

14. (Original) An article as in claim 13, wherein the second wire has a sufficient Young's modulus, such that the second wire is capable of deformable van der Waals contact with the first wire at the junction, upon exposure to a stimulus.

15. (Canceled)

16. (Original) An article as in claim 1, wherein the crossbar array comprises a first set and second set of at least two parallel wires.

17. (Original) An article as in claim 16, wherein the first set of parallel wires is perpendicular to the second set of parallel wires.

18. (Original) An article as in claim 16, wherein the second set of wires is disposed adjacent the first set of wires at a plurality of junctions.

19. (Canceled)

20. (Original) An article as in claim 1, further comprising a contact electrode in electrical contact with at least one of the wires.

21. (Original) An article as in claim 20, wherein the at least one wire is attached to the contact electrode.

22. (Original) An article as in claim 20, wherein the at least one wire is covalently attached to the contact electrode.

23. (Original) An article as in claim 1, wherein each of the at least two wires is in electrical contact with a different contact electrode.

24-55. (Canceled)

56. (Currently amended) An article comprising:

An electrical crossbar array comprising at least two crossed wires defining a memory element able to be switched between at least two readable states, at least one of the wires being constructed and arranged to be movable from a first position to a second position, the ~~device~~ article free of means addressing the memory element to effect switching of the memory element between the at least two states.

57. (Currently amended) An article comprising:

An electrical crossbar array comprising at least two crossed wires defining a memory element able to be switched between at least two readable states, at least one of the wires being constructed and arranged to be movable from a first position to a second position, the ~~device~~ article free of auxiliary circuitry defining the memory element.

58. (Original) An article as in claim 57, wherein the memory element comprises a junction of the two crossed wires.

59. (Original) An article as in claim 57, wherein the auxiliary circuitry includes transistors and capacitors.

60-89. (Canceled)

90. (Currently amended) An article comprising:

an electrical crossbar array comprising at least two crossed nanoscopic wires defining a memory element capable of being switched reversibly between at least two readable states, at least one of the wires being constructed and arranged to be movable from a first position to a second position.

91. (Previously presented) An article as in claim 90, wherein the step of switching comprises biasing the at least two nanoscopic wires.
92. (Previously presented) An article as in claim 90, wherein information stored in the memory element is volatile.
93. (Previously presented) An article as in claim 90, wherein information stored in the memory element is non-volatile.
94. (Previously presented) An article as in claim 90, wherein one readable state comprises the two wires in van der Waals contact.
95. (Previously presented) An article as in claim 90, wherein the two wires have sufficient van der Waals adhesion to maintain contact.
96. (Currently amended) An article comprising:

an electrical crossbar array comprising at least two crossed nanoscopic wires defining a memory element capable of being switched irreversibly between at least two readable states, at least one of the wires being constructed and arranged to be movable from a first position to a second position.
97. (Previously presented) An article as in claim 96, wherein the step of switching comprises biasing the at least two nanoscopic wires.
98. (Currently amended) An article comprising:

an electrical crossbar array comprising at least two crossed wires defining a memory element diode, at least one of the wires being constructed and arranged to be movable from a first position to a second position, the ~~device~~ article being free of auxiliary circuitry defining the memory element diode.

99. (Previously presented) An article as in claim 98, wherein the two crossed wires comprise a first wire disposed adjacent a second wire at a junction.
100. (Previously presented) An article as in claim 99, wherein the first wire is semiconductor.
101. (Previously presented) An article as in claim 100, wherein the second wire is a metallic conductor.
102. (Previously presented) An article as in claim 100, wherein the second wire is a semiconductor.
103. (Previously presented) An article as in claim 100, wherein the second wire is a semiconducting nanotube.
104. (Previously presented) An article as in claim 103, wherein the second wire is a metallic nanotube.
105. (Previously presented) An article as in claim 1, wherein the nanoscopic wire is a nanotube.
106. (Previously presented) An article as in claim 1, wherein the nanoscopic wire is an isolated nanotube.
107. (Previously presented) An article as in claim 106, wherein the nanotube is single-walled.

108. (Previously presented) An article as in claim 107, wherein the nanotube is a single-walled carbon nanotube.
109. (Previously presented) An article as in claim 107, wherein the nanotube is a multiwall carbon nanotube.
110. (Previously presented) An article as in claim 106, wherein the nanotube is a semiconducting nanotube.
111. (Previously presented) An article as in claim 106, wherein the nanotube is a metallic nanotube.
112. (Previously presented) An article as in claim 106, wherein the nanoscopic wire comprises a nanotube rope.
113. (Previously presented) An article as in claim 106, wherein the nanoscopic wire is a nanowire.